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#30	Search site-specific recombination, gram positive	13:50:07	1629
#24	Search intramolecular recombination, gram positive	13:49:51	4
#11	Search beta recombinase	13:49:35	958
#29	Search b	13:49:26	684797
#23	Search intramolecular recombination activity, gram positive	13:25:07	0
#22	Search intramolecular recombination activity, beta recombinase	13:24:49	2
#21	Search intramolecular recombination activity	13:24:42	216
#12	Search beta recombinase, review	12:58:46	38
#10	Search Gene Therapy Inc	12:17:31	613
#8	Search Lechardeur	12:13:50	21
#7	Search galactosyl spermine	09:33:02	1
#6	Search galactosyl spermine	09:32:57	0
#5	Search mannosyl spermine	09:32:51	0
#4	Search lactosyl spermine	09:32:45	0
#2	Search cholesteryl spermine	09:31:03	7
#1	Search cholesteryl spermine, lactosyl spermine	09:30:49	0

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Nov 6 2006 15:24:20

## Appendix

Site-specific recombinase [*Streptococcus pyogenes*], plasmid pSM19035

Accession YP\_232767.1 GI:63021996

makigyarvsskeqnldrqlalqgvskvfdsklsgqsverpqlqamlnyiregdivvvteldrlgrnnkeltelmnaiqqkgatlevlnlpsmngie  
denlrrlinnlvielykyqaeserkrikerqaqgieiaksgkfkgrqhkfkendprlkxhfdlflngcsdkeveeqtginrrtfrtrytrnyvtvdqrknk  
gkrds

A partial list of sequences producing significant alignments		Score (Bits)	E Value
gi 63021985 ref YP_232754.1	site-specific recombinase [Strep...	316	3e-85
gi 81176607 gb ABB59535.1	putative resolvase [Pediococcus acidi	305	7e-82
gi 10956207 ref NP_044464.1	resolvase [Streptococcus agalact...	302	8e-81
gi 392559 gb AAA73395.1	resolvase protein [Streptococcus agalac	301	1e-80
gi 6690329 gb AAF24086.1 AF117258_3	resolvase [Staphylococcus au	297	2e-79
gi 3023049 gb AAC38605.1	resolvase [Enterococcus faecalis]	293	4e-78
gi 6746431 gb AAF27558.1	putative resolvase [Lactococcus lactis	254	1e-66
gi 6739586 gb AAF27319.1	putative resolvase [Lactococcus lactis	251	1e-65
gi 58701072 gb AAW81284.1	hypothetical protein [Lactobacillus p	236	3e-61
gi 108736165 gb ABG00294.1	ORF12 [Lactococcus lactis]	236	4e-61
gi 116334884 ref YP_796409.1	Site-specific recombinase, DNA ...	235	1e-60
gi 56707177 ref YP_163807.1	putative resolvase [Lactobacillu...	234	2e-60
gi 75181775 gb ABA12807.1	hypothetical protein [Lactobacillus p	233	3e-60
gi 75182232 gb ABA12841.1	conserved hypothetical protein [La...	233	4e-60
gi 5420101 emb CAB46556.1	putative resolvase [Streptococcus the	231	2e-59
gi 29377950 ref NP_817076.1	site-specific recombinase, resol...	216	5e-55
gi 69247432 ref ZP_00604345.1	recombinase Sin [Enterococcus ...	185	1e-45
gi 116326678 ref YP_796452.1	Site-specific recombinase, DNA ...	156	6e-37
gi 116490744 ref YP_810288.1	Site-specific recombinase, DNA ...	134	2e-30
gi 69247633 ref ZP_00604427.1	Resolvase, N-terminal:Resolvas...	133	4e-30
gi 69250457 ref ZP_00605155.1	Resolvase, N-terminal [Enteroc...	129	8e-29
gi 81330302 ref YP_398694.1	hypothetical protein pHTbeta_52 ...	127	4e-28
gi 116493435 ref YP_805170.1	Site-specific recombinase, DNA ...	119	7e-26
gi 37595767 ref NP_932185.1	Res2 [Staphylococcus aureus] >gi...	117	2e-25
gi 82743151 ref ZP_00905814.1	integrative genetic element Gs...	115	1e-24
gi 495089 gb AAA26675.1	recombinase >gi 8574415 emb CAB94806...	115	2e-24
gi 1086524 gb AAB08926.1	invertase-enterococcal	113	4e-24
gi 82751033 ref YP_416774.1	recombinase [Staphylococcus aure...	112	1e-23
gi 22476843 gb AAM97333.1 AF426833_2	recombinase Sin [Staphyloco	111	2e-23
gi 13793990 gb AAK38455.1	recombinase Sin [Staphylococcus epide	110	3e-23
gi 22476850 gb AAM97339.1 AF426834_5	recombinase Sin [Staphyloco	110	5e-23
gi 70727309 ref YP_254225.1	recombinase Sin [Staphylococcus ...	109	6e-23
gi 11230707 emb CAC16669.1	recombinase [Staphylococcus haemolyt	109	9e-23
gi 8980455 emb CAB96927.1	Bin3 protein [Stenotrophomonas maltop	108	2e-22
gi 38257108 ref NP_940770.1	recombinase [Staphylococcus warn...	107	3e-22
gi 116514884 ref YP_813790.1	Site-specific recombinase, DNA ...	107	5e-22
gi 111017138 ref YP_700110.1	possible resolvase, N-terminal ...	106	6e-22
gi 11968214 ref NP_072000.1	recombinase [Enterococcus faecal...	105	1e-21
gi 110628945 gb ABG79938.1	resolvase [Lactobacillus reuteri]	104	2e-21
gi 32455946 ref NP_862404.1	putative transposon resolvase [M...	104	3e-21

Application/Control Number: 10/808,161

Art Unit: 1633

### Example Alignment

gi|116326678|ref|YP\_796452.1| Site-specific recombinase, DNA invertase Pin related protein, [Lactobacillus casei ATCC 334]

gi|116106496|gb|ABJ71637.1| Site-specific recombinase, DNA invertase Pin related protein, [Lactobacillus casei ATCC 334]

Score = 156 bits (394), Expect = 6e-37, Method: Composition-based stats.

Identities = 88/156 (56%), Positives = 121/156 (77%), Gaps = 2/156 (1%)

```
Query 1 MAKIGYARVSSKEQNLDRLQALQ--GVSKVFSDKLSGQSVERPQLQAMLNYIREGDIVV 58
      M+KIGYARVS+++QNL RQ++ L GV+K+F +KLSG++ +RPQL+AML+YIR+ D VV
Sbjct 1 MSKIGYARVSTRDQNLARQIEQLHDAGVKNKIFQEKLSGKNADRPQLKAMLDYIRDDDEVV 60

Query 59 VTELDRLGRNNKELTELMNAIQKKGATLEVLNLPSPMNGIEDENLRLINNLVIELYKYQA 118
      V LDRGRN+ +LT+++ I+ +GA L VLNLP IED NLR LI +++ELYKY A
Sbjct 61 VLSLDRGRNSHDLTDIETIRHRGAQLNVNLPSFASIEDPNLRNLITTIIVELYKYIA 120

Query 119 ESERKRIKERQAQGIEIAKSKGKFKGRQHFKENDP 154
      + ER+ IK RQ QGIEIAK +GK+KG+ ++ + P
Sbjct 121 QEERETIKIRQQQGIEIAKRQGYKGIKIREYGPHSP 156
```